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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,212	07/15/2003	Yoshito Mizoguchi	01272.020597.	7075
5514	7590	12/23/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			MOUTTET, BLAISE L	
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DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	Application No. 10/619,212	Applicant(s) MIZOGUCHI ET AL.	
	Examiner Blaise L Mouttet	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/31/2003</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of group I, claims 1-14 in the reply filed on November 12, 2004 is acknowledged. The traversal is on the grounds that the two groups of claims are closely related and searching for one group would likely include a search of the other group. This is not found persuasive because while both groups involve ink draining the first group is directed to the timing of the draining with respect to ink supply and printing times and the second group is directed to draining so as to equalize the amount of remaining ink in a plurality of sub-tanks. A search involving a timing of when ink draining occurs does not necessitate a search for equalizing the amount of remaining ink in a plurality of sub-tanks. A search involving equalizing the amount of remaining ink in a plurality of sub-tanks does not require consideration of the timing at which such ink draining occurs. Thus the restricted groups involve distinct inventive concepts and would require divergent searching and consideration of the prior art placing an undue burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claims 15-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 12, 2004.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The IDS filed October 31, 2003 has been considered.

***Specification***

4. The abstract of the disclosure is objected to because in line 9 "ink supply controller" should read --an ink supply controller--, in line 11 "preceding time" should read --a preceding time--, in line 12 "next time" should read --a next time--, in lines 12-13 "ink draining controller" should read --an ink draining controller--, in line 13 "draining" should read --draining of--, in line 15 "preceding time" should read --the preceding time-- and in line 16 "next time" should read --the next time-- in accordance with English syntax. Correction is required. See MPEP § 608.01(b).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

5. Claims 1-14 are objected to for several discrepancies in English syntax.

Examples include:

Definite or indefinite articles (i.e. a, an, the) are missing for various claim limitations such as in claim 1, line 9 wherein "preceding time" should read --a preceding time-- and in claim 1, line 10 wherein "next time" should read --a next time--. This defect is noted repeatedly throughout the claims. For repeated instances referring back to the preceding time or next time --the-- should be included prior to the recitation.

In claim 2, lines 5-6, claim 4, lines 5-6, claim 5, lines 5-6, claim 8, lines 5-6, claim 9, lines 5-6, claim 10, lines 5-6 it is suggested that "...power source being held OFF.." be amended to read --...power source being turned OFF.-- which seems to be the intent of this limitation.

In claim 3, lines 2-3 it is suggested that "...control means controls to perform ink draining process.." be amended to read --...control means performs an ink draining process.--.

In claim 3, line 5 it is suggested that "...controls not to perform ink draining process.." be amended to read --...does not perform an ink draining process.--.

In claim 6, line 2 "...comprises.." should read --...further comprises.--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 101 and 35 USC § 112***

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A claim directed to both an apparatus and a process is improper under 35 USC 101 since 35 USC 101 is stated in the alternative thus excluding an apparatus and process of its use in a common claim. A claim directed to both an apparatus and a process is improper under 35 USC 112 2<sup>nd</sup> paragraph since the inclusion of two different statutory classes in a common claim leads to indefiniteness. In the current instance the "warming process" is not claimed so as to be associated with any structural claim limitations (e.g. a heater, warming means, etc.) and is therefore improperly incorporated into a claim drawn to an apparatus. See MPEP 2173.05(p).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Blum et al. US 6,398,351 B1.

Blum et al. discloses, regarding claim 1, an inkjet printing apparatus (figure 1) having a main tank (ink supply tank 1) storing ink (column 2, lines 6-7), a sub-tank (ink tank 13) releasably connectable with said main tank (1) through an ink supply passage (as explained in view of column 2, lines 37-41 the refill line connecting ink tank 13 and ink supply tank 1, which is connected in order to provide ink for printing, is able to be disconnected during an ink change operation) and a printing head (50) for ejecting ink supplied from said sub-tank (13), for performing printing by ejecting ink from said printing head (50) to a print medium (column 1, lines 5-9, column 2, lines 6-18), comprising:

ink supply means (equivalent to the structure for performing the ink filling as described in column 3, lines 49-57) for supplying ink from said main tank (1) to said sub-tank (13) through said ink supply passage within a period after completion of printing at a preceding time and before starting printing at a next time (although not explicitly stated it is clear at least from column 1, lines 11-18 and column 2, lines 37-41 that the ink change operation taught must occur between printing jobs since the ink supply line is disconnected during part of the change, making continued printing impossible, and since the purpose of the flush system is directed to changing inks between printing jobs); and

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ink draining means (equivalent to the structure for performing the ink flushing as described in column 2, lines 20-25) for performing ink draining for draining at least part of ink remaining in said sub-tank (13) within said period after completion of printing at the preceding time and before starting printing at the next time and in advance of ink supply by the ink supply means (as explained in column 3, lines 54-57 the ink is drained prior to the ink refilling).

Regarding claim 7, an initial ink supply is performed before the ink draining followed by additional ink supply (column 3, lines 49-57).

Regarding claim 11, substantially all of the ink is drained during the draining operations (column 2, lines 23-25).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to



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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. US 6,398,351 B1 in view of Takano et al. US 4,007,684.

Blum et al. discloses the subject matter of claim 1 as explained in the 35 USC 102 rejection above.

Blum et al. fails to disclose performing a warming process for elevating the temperature of the ink before the ink draining process performed by the ink draining means.

Takano et al. discloses warming ink during a printing period in a continuous inkjet printer to maintain stable viscosity of the ink and ensure stable printing (abstract).

It would have been obvious to a person of ordinary skill in the inkjet art at the time of the invention to include a warming process for the ink during a printing process (i.e. prior to the ink draining) in the apparatus of Blum et al. given the teaching of Takano et al.

The motivation for doing so would have been to maintain stable viscosity of the ink and ensure stable printing as taught by the abstract of Takano et al.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. US 6,398,351 B1 in view of Stoneburner US 3,891,121.

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Blum et al. discloses the subject matter of claim 1 as explained in the 35 USC 102 rejection above.

Blum et al. fails to disclose a timing trigger to initiate the ink draining.

Stoneburner is relevant to inkjet type printing mechanisms (column 1, lines 6-27) and teaches shut down of the drop generator as an optimum time to perform draining processes (column 4, lines 48-59).

It would have been obvious to a person of ordinary skill in the inkjet art to use a turning off of a power source for the ink drop generator (printhead), as suggested by Stoneburner, as the trigger to initiate the ink draining of Blum et al.

The motivation for doing so would have been to avoid production of erratic drops and avoiding collection of the ink around the orifices during shut down of the ink drop printhead as suggested by column 4, lines 48-59 of Stoneburner.

#### ***Additional Prior Art***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Erskine et al. US 4,714,931 teaches draining and supplying ink to an ink tank in an inkjet printer and using an ink level detector and timer to detect the ink viscosity. However, whether or not the draining is performed is not taught to be a function of the viscosity.

Yoshino et al. US 6,471,345 teaches performing an ink draining prior to an ink supply operation for a sub-tank of an ink jet printer (column 26, line 50 – column 27, line 12).

Kuribayashi et al. US 6,536,885 teaches performing ink draining and supplying operations under reduced pressure (abstract) and teaches that if a printing head has not been used for “a long time” draining of the printing head and an ink sub-tank is necessary (column 3, lines 17-35). However no measuring or control devices are taught so as to determine whether or not draining is performed based on any predetermined time interval related to printing operations (e.g. time between power off and print start signal, etc.).

### ***Allowable Subject Matter***

11. Claims 2-6 and 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and provided the noted objections to the claim syntax are corrected.

The objected to claims are differentiated from the applied prior art in terms of the various control means for controlling whether or not the draining process is to be performed based on the measured periods, the calculated remaining ink amount, or the calculated viscosity of the current ink as in the various combinations as claimed. These limitations, in the combinations as currently claimed, are not shown or rendered obvious by the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet who may be reached at telephone number (571) 272-2150. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet December 16, 2004

*Blaise Mouttet 12/16/2004*